

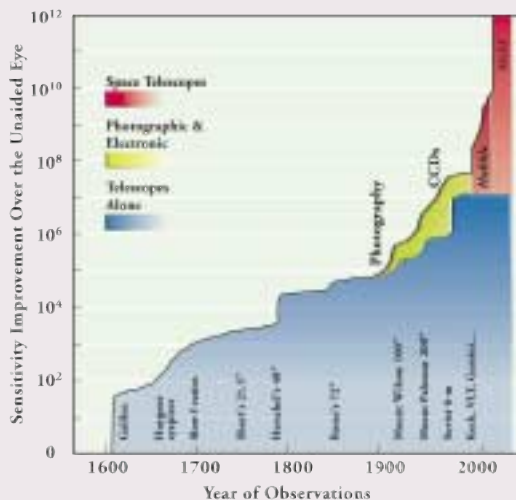
# S O C

## Complex Instruments

- A (~4' x 4') wide field near infrared camera, sensitive over the range of .6-5.0 microns
- A multi-object spectrograph (4' x 4' FOV) capable of R ~1000 spectroscopy for over 100 objects in the NIR (1 -5 microns)
- A general-purpose Mid-Infrared Camera (approximately 3' x 3') and spectrograph R ~ 3 -1500 over the range of 5-28 microns.

## Sensitivity Improvements

Our advances in astronomy and understanding of the heavens are a function of telescopes' capabilities. Galileo needed only a 3X optic to resolve the craters of the moon, the crescent of Venus and the movements of Jupiter's satellites. The world was changed forever. In the last 400 years, only HST has made as significant an increase in capability over existing facilities. NGST will be able to make an equally large step.



# S O C

## Proposal Process

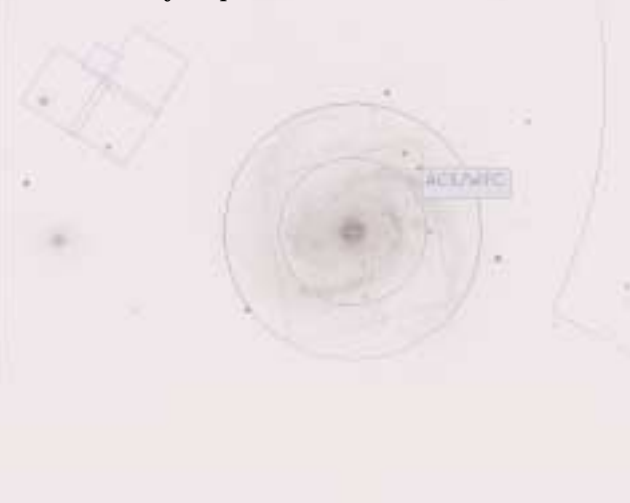
### Streamlined Scheduling from proposal to data

User's submit the plans; users are the drivers. Because of NGST's L2 orbit and onboard operations, users can specify their programs more simply and directly than with HST. By submitting complete observing plans with the proposal, the SOC will significantly reduce the time between the submission and getting back data. As a goal, NGST should execute 50% of the current program before the deadline for proposals for the next year's program.

## Targeting Tools

By providing a tool-box that encourages creative and innovative proposals, the STScI will provide astronomers the best opportunity to exploit NGST's capabilities for breakthrough science. Astronomers can see for themselves what they get using:

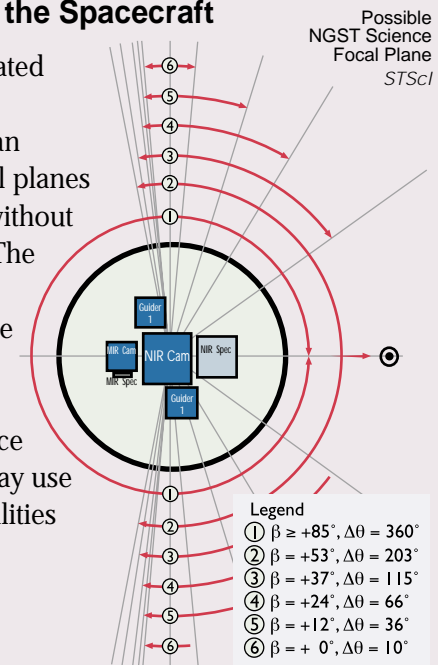
- Exposure time calculators
- Viewing tools for detailed planning
- Plans ready to put in the mission schedule



# S O C

## Efficient • Easy Scheduling the Spacecraft

Using a dedicated Guider, three instruments can share the focal planes and operate without interference. The SOC provides the tools so the science teams and the international science community may use the full capabilities of the science instruments.



Under the control of the NGST Observation Plan Executive (OPE), observations are planned and executed in an event-driven list, very different from the time-ordered list used by HST.

The Result: more efficient and flexible operations. Each step in an observation maintains its place, rather than time, in the execution queue. If the previous step finishes early, the next step is initiated. Less on-target time is wasted if a problem, such as a guide star acquisition failure, occurs because the OPE will move to the next observation in the queue rather than wait until a specified start time to initiate it.